2012-13 Median Student Growth Percentile Reports: An Overview

February 2014

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Overview of Student Growth Percentiles

Overview of Median Student Growth Percentiles

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All districts will receive secure access to their 2012-13 teacher Median Student Growth Percentile (mSGP) data on February 4, 2014

Key Takeaways:

- Teachers have the **highest impact** on student achievement of any in-school factor

- mSPG is an important part, but **only one part of an educator's evaluation**

  – 2012-13 mSGP data is being provided as a "dry run" with **no consequences** for this year's evaluation

  – This dry run is an opportunity for teachers and leaders to **discuss the data together** and **improve data quality** for next year

- By statute, mSGPs (like all aspects of an individual's evaluation) are **confidential and should not be shared publicly**

- NJDOE has **worked with NJ educators in taking a long and thoughtful approach** to implementing both evaluations and mSGP

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Focus on Teacher Quality, Multiple Measures

- Teachers have the **highest impact on student achievement** of any in-school factor
    - The effect of increases in teacher quality swamps the impact of any other educational investment, such as reductions in class size[1]
    - Replacing one poor teacher with an average one increases a classroom's lifetime earnings by ~$266,000[2]

- **Accurate evaluations,** meaningful **professional development**, high-quality **preparation and recruitment** practices, and targeted **retention** initiatives all work together to ensure our students have great teachers

- No teacher should or will be evaluated only on one measure; mSGPs will be **used in combination** with observations and Student Growth Objectives (SGOs) to provide a more informative and comprehensive evaluation process

1. Goldhaber, 2009
2. Chetty et al., 2011

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Context for SGPs in New Jersey

- Student Growth Percentile (SGP) **methodology is not new**; SGP was adopted in the 2009-2010 school year and first used for school accountability in the 2011-2012 annual performance reports

- **TEACHNJ Act requires use of at least one measure of student growth in evaluations** (18A:6-123: "Standardized assessments shall be used as a measure of student progress...")
    – AchieveNJ incorporates **2 measures of growth**: mSGP and SGOs

- NJDOE has been **building capacity to share mSGP for over 4 years,** including distribution of 2011-12 mSGP data to pilot Districts last year

- mSGP data is derived from teacher and student roster data **provided by Districts** through a submission process in place since 2012

Release of 2012-13 mSGP Data

- The 2012-13 mSGP data has **no consequences** for this year's evaluation and the NJDOE views this a "dry run"

- This dry run is intended primarily to **examine data quality**, consider related **professional learning opportunities**, and **prepare** for the upcoming roster data collection (June 2014) and distribution of the 2013-14 mSGP data (January 2015)

- Evaluation data of a particular employee **shall be confidential** in accordance with the TEACHNJ Act and N.J.S.A. 18A:6-120.d and 121.e.
  - Teacher mSGP data should be handled in the secure manner one would treat, handle, and store any part of a confidential personnel record and **should not be released to the public**

Support for Use of SGPs for Accountability

- "**New Jersey's choice to use SGP scores follows years of accountability efforts using assessment data for similar purposes.** This data - used in conjunction with other multiple measures of teacher practice and student achievement - is an **appropriate and useful tool** to better understand and identify effective educators and schools."

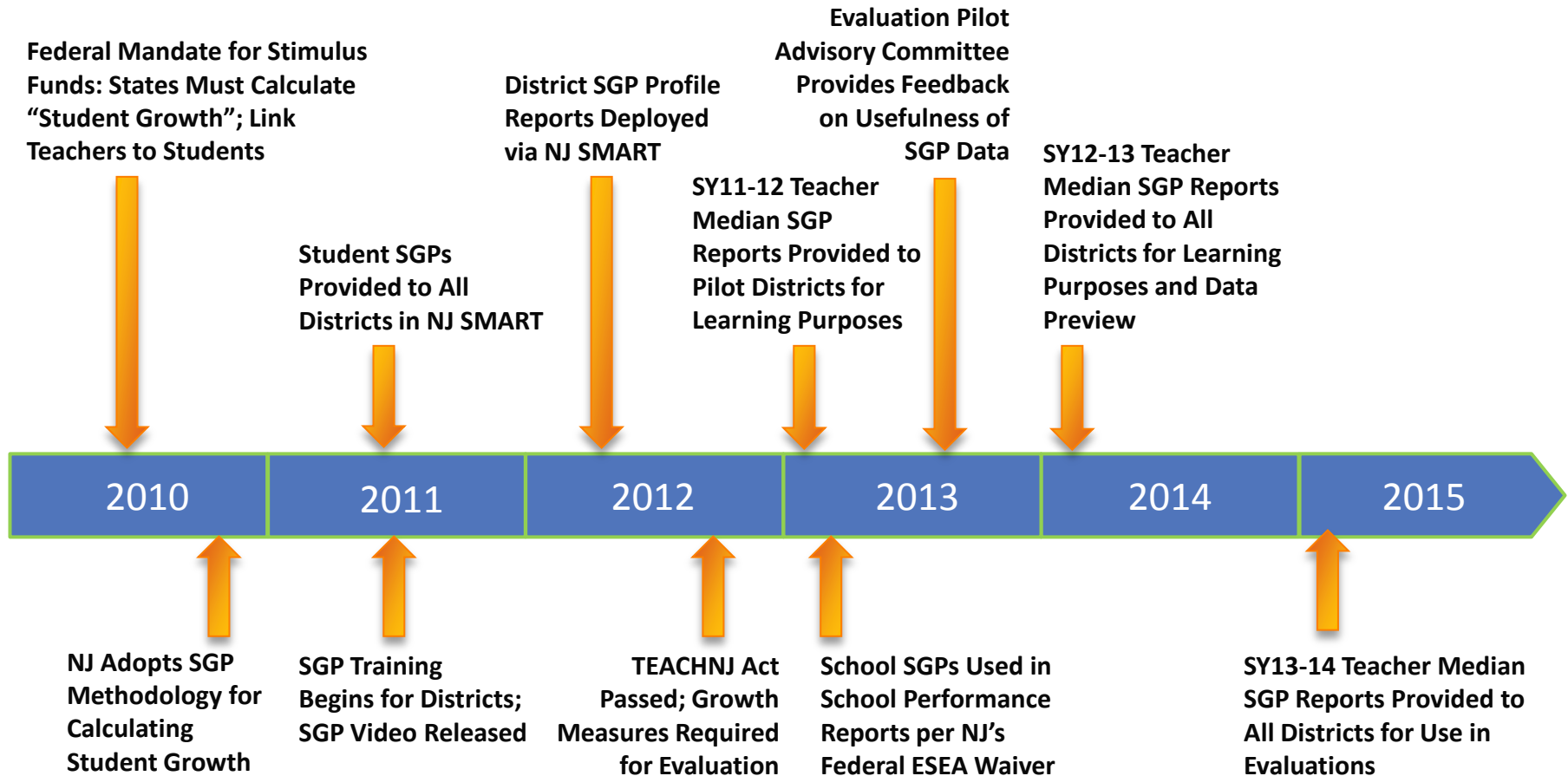 ~Damian Betebenner, Senior Associate, Center for Assessment

- "The **correlation between SGP (which is a form of value-added) and any other model that controls flexibly for prior test performance is likely to be very high**...there are some people who argue that, on theoretical grounds, using percentiles and medians is better."

  ~Jonah Rockoff, Columbia University

Timeline of SGP Development in New Jersey

A thoughtful, multi-year approach to ensure data is accurate and usable

Federal Mandate for Stimulus Funds: States Must Calculate "Student Growth"; Link Teachers to Students

District SGP Profile Reports Deployed via NJ SMART

Evaluation Pilot Advisory Committee Provides Feedback on Usefulness of SGP Data

SY11-12 Teacher Median SGP Reports Provided to Pilot Districts for Learning Purposes

SY12-13 Teacher Median SGP Reports Provided to All Districts for Learning Purposes and Data Preview

Student SGPs Provided to All Districts in NJ SMART

2010	2011	2012	2013	2014	2015

NJ Adopts SGP Methodology for Calculating Student Growth

SGP Training Begins for Districts; SGP Video Released

TEACHNJ Act Passed; Growth Measures Required for Evaluation

School SGPs Used in School Performance Reports per NJ's Federal ESEA Waiver

SY13-14 Teacher Median SGP Reports Provided to All Districts for Use in Evaluations

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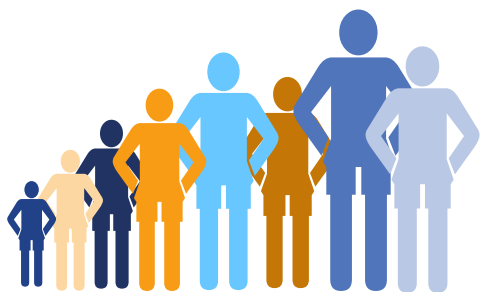
Background

Overview of Student Growth Percentiles

Overview of Median Student Growth Percentiles

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# Calculating Student Growth Percentiles

All students can show growth.

- Student Growth Percentiles (SGPs) measure how much a student has learned from one year to the next compared to students with a similar NJ ASK performance history from across the state ("academic peers").

- SGP scores range from 1 to 99

Why Student Growth?

A student's NJ ASK score does not tell the whole story.
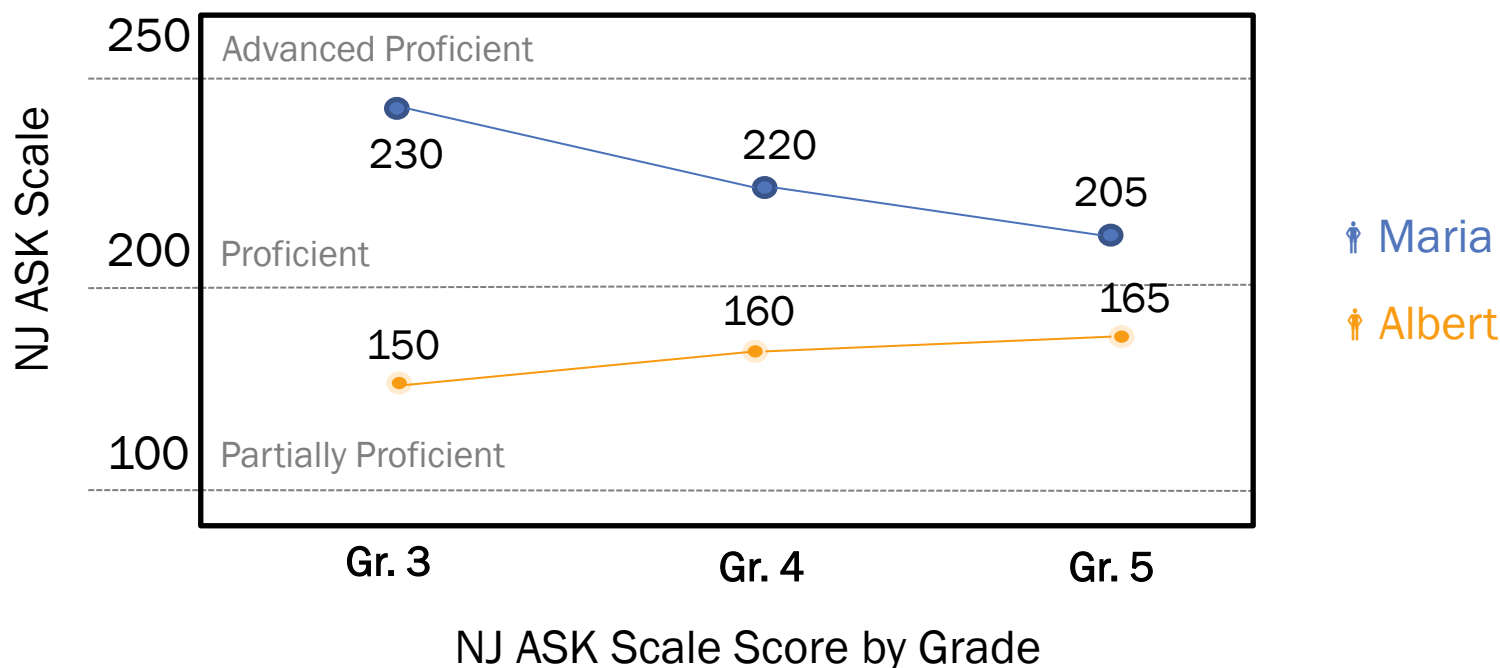
Under our current system, schools and parents might only notice that Maria is "Proficient" and that Albert is "Partially Proficient."
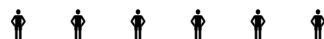
SGP Considers Growth, Not Proficiency

Albert has taken the 5th-grade NJ ASK. How does his score compare to those of his academic peers?

Albert's Prior Scores

3rd Gr.	150
4th Gr.	160
5th Gr.	165

Academic Peers' Prior Scores

|	
3rd Gr.	≈150
4th Gr.	≈160
5th Gr.	???

Understanding Academic Peers

- **Multiple consecutive years of data** are required to calculate SGP.
  - Since 3rd grade is the first year of the NJ ASK, 4th grade is the first year for which we can calculate SGP.

- **The more years of data available, the more precise an academic peer group i**s.
  - By 8th grade, we have up to 6 years of scores for the calculation (as long as students have taken the same assessments).
  - If a student does not have an NJ ASK score for a given year, an SGP cannot be calculated until he/she has 2 consecutive years of scores.

- **The peer group includes all students** in a grade cohort who have taken the exact same assessments, i.e., all 7th graders who took the 3rd, 4th, 5th and 6th-grade Math NJ ASK *and* the 7th-grade Math NJ ASK

- **Academic peer groups are recalculated every year**, considering all assessment data for a given cohort of students.

Determining an SGP

Albert's 5th-Grade NJ ASK Score
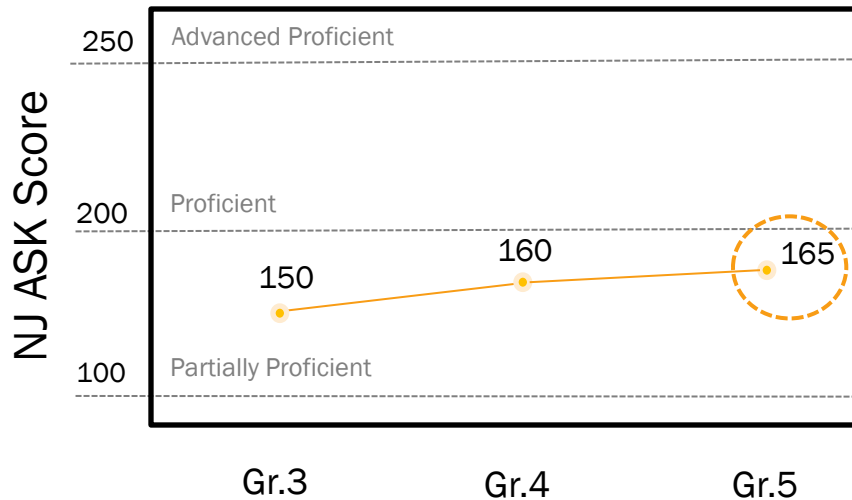
Albert's Academic Peers' NJ ASK Scores
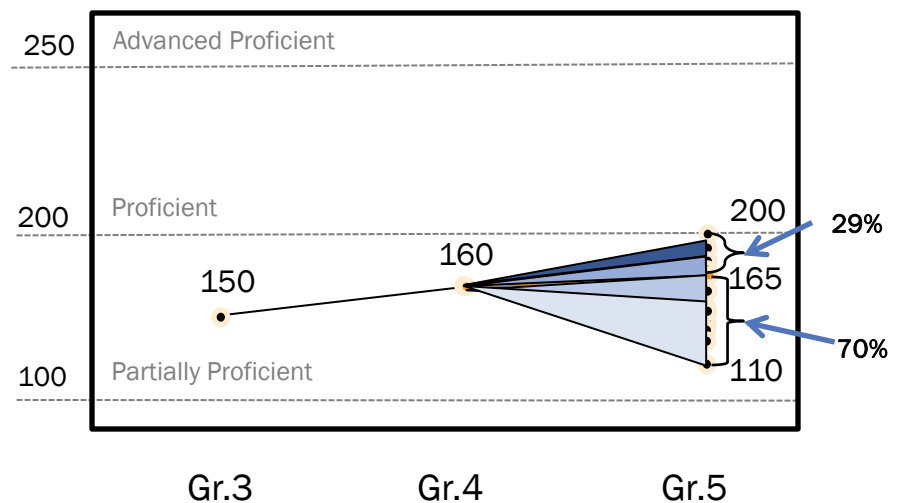
Albert scored 165. His academic peers scored between 110 and 200.
How did Albert do in comparison to them?

Determining an SGP

Albert's Score   Academic Peers' Scores

| 5th Gr. | 165 |

| 5th Gr. | 110 - 200 |

SGP

1%   70%   99%
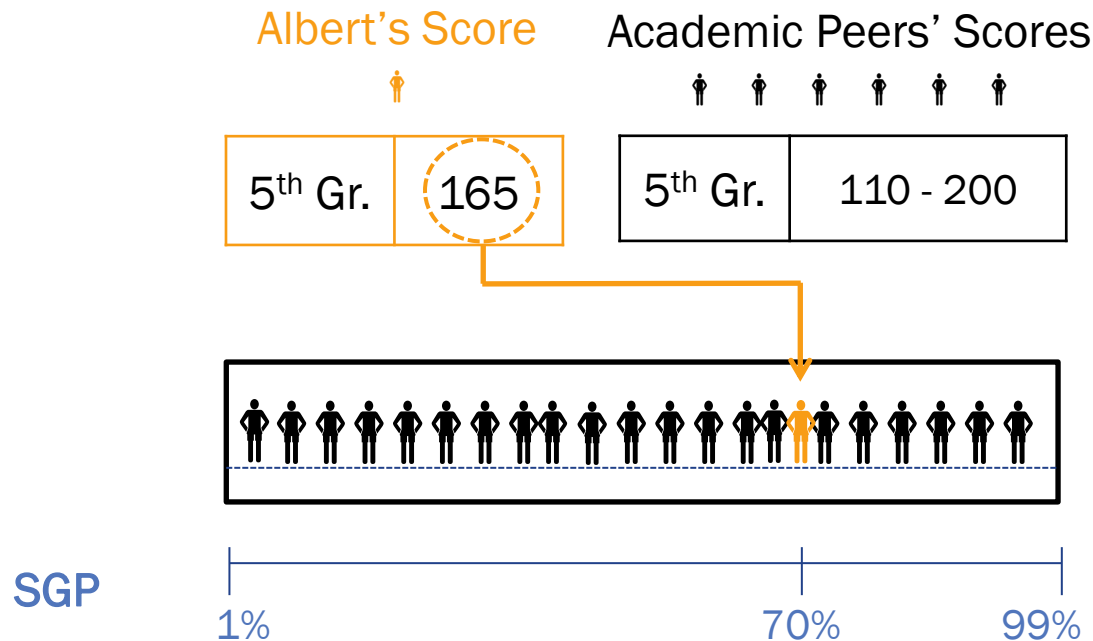
A comparison to his academic peers allows us to see that Albert actually outperformed 70% of students who, up until this year, performed in a similar manner to Albert. Albert's SGP score would be 70.

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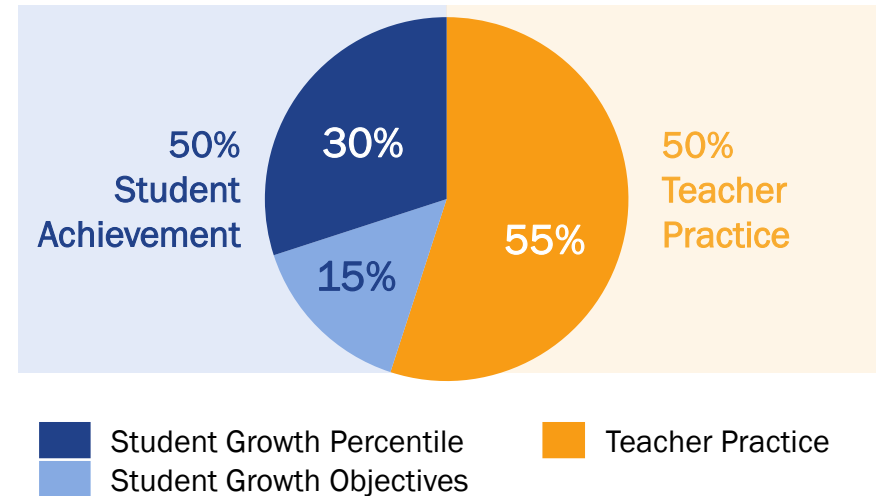
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mSGP Qualification and Weighting

To receive an median Student Growth Percentile score, teachers must:

1. Teach a 4th- 8th grade Math or Language Arts class, **and**

2. Be the teacher of record for at least 60% of the course prior to the NJ ASK assessment, **and**

3. Have at least 20 students with valid SGP scores who are enrolled in the class for at least 70% of the school year before they take the NJ ASK

For the 2013-14 school year, evaluations for teachers with an mSGP score (representing less than 20% of NJ's teachers) will be comprised of the following components and weights:

50% Student Achievement — 30%, 15%

50% Teacher Practice — 55%

Legend:
- Student Growth Percentile
- Student Growth Objectives
- Teacher Practice

Determining a Teacher's mSGP Rating

Albert's SGP is arranged along with the SGPs of all his teacher's students from low to high.
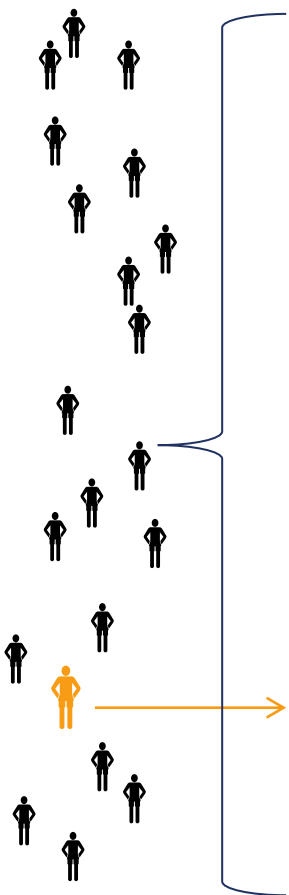
Student	SGP Score
Hugh	12
Eve	16
Clarence	22
Clayton	24
Earnestine	25
Helen	31
Clinton	35
Tim	39
Jennifer	44
Jaquelyn	46
Lance	51
Roxie	53
Laura	57
Julio	61
Selena	65
Ashlee	66
Albert	70
Mathew	72
Maria	85
Charles	89
Milton	97
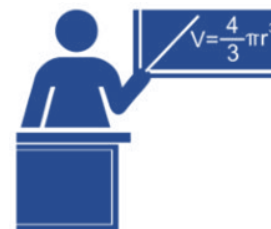
Albert's teacher would receive a median SGP score of 51.

$$V = \frac{4}{3}\pi r^3$$

mSGP Technical Rules

Student	SGP Score
Hugh	12
Eve	16
Clarence	22
Clayton	24
Earnestine	25
Helen	31
Clinton	35
Tim	39
Jennifer	44
Jaquelyn	46
Lance	51
Roxie	53
Laura	57
Julio	61
Selena	65
Ashlee	66
Albert	70
Mathew	72
Maria	85
Charles	89
Milton	97

## In future years, teachers should know that:

- If two or three years of data are available, the Department will use the **best available score** — either the teacher's median score of their current roster or the median of all student scores over the years available.

- The mSGP score, along with the observation and SGO scores, will be placed on a 1.0 - 4.0 scale and weighted appropriately to determine a summative evaluation rating.

Student	SGP Score
Hugh	12
Eve	16
John	16
Charles	20
Annie	20
Clarence	22
Clayton	24
Earnestine	25
Jake	27
Helen	31
Rachel	33
Clinton	35
Tim	39
George	41
Amber	42
Jennifer	44
Jaquelyn	46
Bobby	50
Lance	51
Roxie	53
Mike	55
Mel	56
Laura	57
Regina	58
Marissa	60
Julio	61
Faye	63
Selena	65
Ashlee	66
Jackie	67
Courtney	68
Albert	70
Matthew	72
Laura	77
Jack	78
Jared	80
Rick	84
Maria	85
Charles	89
Michelle	92
Molly	95
Milton	97

Example Summative Rating for 2013-14

Component	Raw Score	Weight	Weighted Score
Teacher Practice	2.5	x 55%	1.38
Student Growth Percentile	3.0	x 30%	.90
Student Growth Objective	3.0	x 15%	.45
Sum of the Weighted Scores			2.73

2.73

Ineffective	Partially Effective	Effective	Highly Effective

1.0   1.85   2.65   3.5
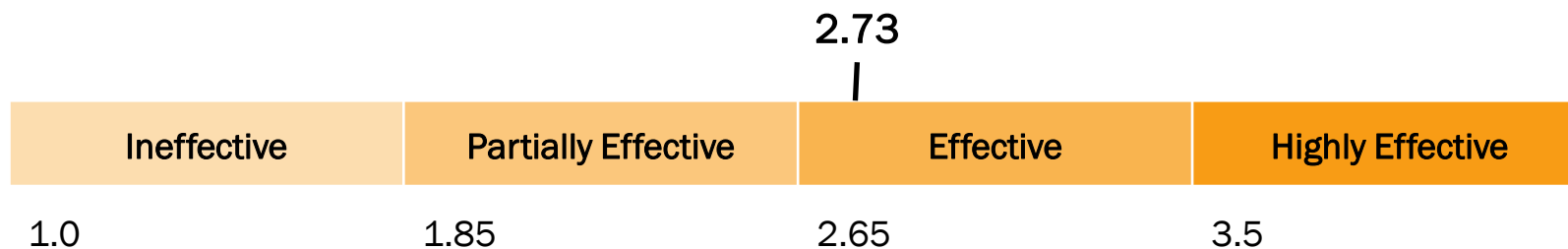
Teacher mSGP Report

On February 4, 2014, individual teacher mSGP reports will provide:

- **Background information** about SGPs and mSGPs

- The teacher's **mSGP score** for 2012-13

A chart depicting an example of a self-contained teacher's score is shown below. The 48 total student scores are placed in ascending order, and the median is then selected from that list. The result of this process in the example below is an mSGP of 51. (The Math and LAL mSGP scores are not averaged.) Note that in some cases, a student may have 2 scores on a teacher roster (Math and LAL).

TEACHER	mSGP	# STUDENTS ASSIGNED
Language Arts Literacy	58	21
Mathematics	47	27
Overall	51	48

- **Suggestions for how to interpret and utilize the data** and access to **additional resources**

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- <u>Districts</u>: **download secure mSGP reports** and provide individual teacher reports **confidentially**, ideally through one-on-one conference
  - Department resources: http://www.nj.gov/education/AchieveNJ/teacher/percentile.shtml

- <u>Teachers</u>: **review** data, **share questions/feedback** with supervisor/ScIP, work with supervisors to **ensure course roster accuracy** for 2013-14

- <u>District Evaluation Advisory Committee</u>: **share feedback** with the Department to help inform the 2013-14 mSGP data release

- <u>District Data Managers</u>: **submit 2013-14 course roster information** in summer 2014 (following the same procedures in place for past 2 years)

- <u>Department</u>: **share data quality control protocol** in coming months, **release 2013-14 mSGP data** in early winter 2015

FIND OUT MORE:

www.nj.gov/education/AchieveNJ

http://www.nj.gov/education/AchieveNJ/teacher/percentile.shtml

educatorevaluation@doe.state.nj.us

Appendix: mSGP Conversion Chart

- The following slides depict and explain how mSGP values will translate to a 1.0 - 4.0 score as part of the summative evaluation.

mSGP Conversion from 1 - 99 to 1.0 - 4.0

mSGP Score	Evaluation Rating
1 – 20	1
21	1.1
22	1.2
23	1.3
24	1.4
25	1.5
26	1.6
27	1.7
28	1.8
29	1.9
30	2
31	2.1
32	2.2
33	2.3
34	2.4

mSGP Score	Evaluation Rating
35	2.5
36	2.5
37	2.6
38	2.6
39	2.7
40	2.7
41	2.8
42	2.8
43	2.9
44	2.9
45	3
46	3
47	3
48	3
49	3

mSGP Score	Evaluation Rating
50	3
51	3
52	3
53	3
54	3
55	3
56	3.1
57	3.1
58	3.2
59	3.2
60	3.3
61	3.3
62	3.4
63	3.4
64	3.4

mSGP Score	Evaluation Rating
65	3.5
66	3.5
67	3.5
68	3.6
69	3.6
70	3.6
71	3.7
72	3.7
73	3.7
74	3.8
75	3.8
76	3.8
77	3.9
78	3.9
79	3.9
80 - 99	4

Based on the mSGP score, Albert's teacher receives a rating of 3 for this component, which is then combined with other evaluation components to get a summative rating.

mSGP Conversion Chart Explained

mSGP Score	Evaluation Rating
35	2.5
36	2.5
37	2.6
38	2.6
39	2.7
40	2.7
41	2.8
42	2.8
43	2.9
44	2.9
45	3.0
46	3.0
47	3.0
48	3.0
49	3.0
50	3.0
51	3.0
52	3.0
53	3.0
54	3.0
55	3.0
56	3.1
57	3.1
58	3.2
59	3.2
60	3.3
61	3.3
62	3.4
63	3.4
64	3.4

Why are all the values between 45 and 55 set to the same score (3.0)?

- The Department believes that educators in the middle of the mSGP distribution are driving significant academic growth in their students.

- Educators whose students achieve scores in this range should be recognized by receiving a rating on par with their impact.

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mSGP Conversion Chart Explained

mSGP Score	Evaluation Rating
1 – 20	1.0
21	1.1
22	1.2
23	1.3
24	1.4
25	1.5
26	1.6
27	1.7
28	1.8
29	1.9
30	2.0
31	2.1
32	2.2
33	2.3
34	2.4

Why are the values at the extreme ends of the distribution, 1-20 = 1 in this case (and 80-99 = 4), set to the same score?

- When more than half of a teacher's students are in the top 20 percentile points on the SGP scale it is an indication of very high growth.

- When more than half of a teacher's students are in the bottom percentile points this is an indicator of low growth to be considered with other evidence.

mSGP Score	Evaluation Rating
65	3.5
66	3.5
67	3.5
68	3.6
69	3.6
70	3.6
71	3.7
72	3.7
73	3.7
74	3.8
75	3.8
76	3.8
77	3.9
78	3.9
79	3.9
80 - 99	4.0

mSGP Conversion Chart Explained

mSGP Score	Evaluation Rating
65	3.5
66	3.5
67	3.5
68	3.6
69	3.6
70	3.6
71	3.7
72	3.7
73	3.7
74	3.8
75	3.8
76	3.8
77	3.9
78	3.9
79	3.9
80 - 99	4.0

Why Decimals? Why Tenths?

- The use of decimals instead of whole numbers enables the scale to increase/decrease gradually, improving the statistical efficiency of the conversion.

- This prevents large rating differences that may not accurately reflect significant differences in student learning.